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Alcimedes

From the perspective of the forensic pathologist, drowning is still a difficult autopsy diagnosis because there are no pathognomonic findings at autopsy to indicate that drowning was the cause of death. Of the various tests available to the pathologist to support a diagnosis of death by drowning, the diatom test is widely considered to be the “gold standard” even though it is still somewhat controversial and rather labour-intensive. The diatom test relies on identifying the presence of aquatic micro-organisms (diatoms) derived from the drowning medium in the tissues of a drowning victim (such as liver, kidney and bone marrow) in order to establish that haematogenous dissemination of the diatoms has occurred from the lung before death, thus establishing that the body was alive when it entered the water. A study in *Forensic Science International* (2008;182:20–6) focuses on the potential of a microbiological test for detecting common bacterial markers of water faecal pollution such as faecal coliforms and faecal streptococci as possible indicators of drowning. Although this was a small study conducted in only 10 victims of drowning and three controls, the findings support further development of this test for drowning as it appears to be sensitive, inexpensive, fast, and can be used for drowning in both freshwater and saltwater.

In recent years, marijuana has been found adulterated with a wide range of different adulterants, including powdered glass, chalk and elemental lead (the latter was responsible for causing poisoning in at least 100 marijuana smokers in Germany). Because of the health risk adulterants may pose, marijuana is regularly checked in The Netherlands for the presence of such substances. A case study from that country (*For Sci Int* 2008;182:e23–4) reports the identification of two illegal analogues of sildenafil (Viagra®) in a sample of marijuana. Smoking studies confirmed that the analogues could be inhaled by smoking and the authors postulate that the purpose of adding this adulterant may be to create a drug interaction that increases the uptake of the psychoactive components from marijuana, thus enhancing the experience. It certainly appears that smokers of this adulterated batch of marijuana may get more than they bargained for!

The accurate identification of bodily fluids in forensic examinations plays an important part in the investigation of crimes and the verification of criminal identity. The detection of saliva is impor-

tant in this respect because identifying an assailant's saliva on a victim's skin provides evidence that the assailant had contact with the victim. Furthermore, the assailant's DNA may be isolated from the saliva, thereby verifying identity. The problem with the conventional method of testing for the presence of saliva (identifying the presence of α -amylase) is that α -amylase may be present in other bodily fluids such as urine and semen. By using DNA amplification methods, researchers have been able to detect common oral bacterial strains, *Streptococcus salivarius* and *Streptococcus mutans*, that confirm the presence of saliva in forensic samples (*For Sci Int* 2009;183:20–3). Because these bacteria were not detected in semen, urine, vaginal fluid, or on skin surfaces, the authors suggest that the technique can reliably discriminate saliva from other body fluids and is a useful method for identifying saliva in forensic science.

The growth in web-based child pornography has seen a parallel increase in the number of requests for expert opinions on the age of the individuals represented. While it may seem reasonable to think that observation of specific parameters concerning growth and sexual maturation may be useful in answering this question – and that specific classes of professionals such as paediatricians, gynaecologists and forensic physicians should have the tools (such as Tanner staging) to age youngsters even from pictures, a report in *Forensic Science International* (2009;183:e21–4) urges caution. For example, the authors remind us that Tanner himself quotes that using the Tanner stages to estimate the probable chronological age is a “wholly illegitimate use of Tanner staging” and cautions paediatricians and other physicians to refrain from providing “expert” testimony as to chronologic age based on Tanner staging. The same arguments can be applied to the evaluation of other even more general indicators of growth, such as gross facial morphology. In order to determine how accurately examiners were able to assess the age of females from their photographs, the authors showed images of 11 females taken from pornographic sites where the ‘actresses’ were known to be over the age of 18 years to a combination of 51 professional and lay examiners. All classes of examiner performed poorly, with paediatricians and gynaecologists performing worst by incorrectly identifying the subjects as being under 18-years of age in between 69% and 93% of cases.